Big Shifts in Trade Policies during the Great Recession: The case of Sino-U.S. trade activities

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ABSTRACT

Trade protectionism has increased during both the Great Depression and the Great Recession. The raising tariff rate was the major trade policy during the Great Depression, but the protective trade policies have been shifted to anti-dumping investigations and unconventional policies, which are more hidden during the recent financial crisis. In order to improve its trade balance, the U.S. initiated anti-dumping investigations and implemented those unconventional policies: local content requirement and public procurement. The empirical evidence suggests that anti-dumping investigation has no significant impact on improving the U.S. trade balance.

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1. Introduction

Most of the countries have been hit by the recent financial crisis in 2008, accompanying with economic downturns, the international trade volume of major economies has been massively reduced. According to the UN Comtrade statistics, the trade volumes of the U.S., China and EU countries has dropped by 20.32%, 13.89% and 23.27% in 2008, respectively. To stabilize their economies, those countries have raised protectionism as the policy response to the crisis (Milner 2011). These policies generate more trade friction and stop trade flows between these countries and their trade partners. During the Great Depression in 1930s, many countries closed their borders by imposing tariffs and quotas (Farhad 2011) as the policy response to the crisis. Unlike the Great Depression in 1930, the choice of trade policy instruments in response to the financial crisis is quite different this time, anti-dumping policy is becoming a major trade policy tool comparing with the trade policy choices during the Great Depression.

In particular, trade frictions between the two largest economies (China and the U.S.) in the world have been sustained for a long period. The U.S., as the largest importer from China, has raised protectionism policies in different forms to reduce the export from the China in the U.S. market thus to improve its trade deficits and economic performance. In 2008, there were in total 68 anti-dumping investigations against China exports by the U.S international trade commission.

In order to keep trade flows smoothly and freely, the World Trade Organization (WTO) acts as an important platform for its members to resolve trade disputes and formalize the trade agreements. However, WTO objective is not only to liberalize international trade, but also to maintain the trade barriers, which could protect consumers of each country. Under WTO framework, there are only a few trade policy tools for each country, which can be implemented to respond to unfair trade. The frequently used trade policy tools are anti-dumping investigations, countervailing duty, tariffs and quotas, and general economic

support. In the following sections, the discussion will focus on anti-dumping actions. Through the analysis of the U.S. anti-dumping investigations against China, it is possible to pursue the effectiveness of the U.S. anti-dumping policy against China after the 2008 financial crisis.

The purpose of this paper is firstly to explain why the anti-dumping trade measure is gradually becoming a popular trade defense instrument. Secondly, what are the new trade policy options for countries to raise trade protection besides anti-dumping investigations? At last, the paper analyzes whether U.S. anti-dumping policy against China was able to improve the U.S. economy after the outbreak of the financial crisis, in particular, whether the U.S. anti-dumping policies were effective or not to help the U.S. change its trade deficit vis-à-vis China. Through the research of the U.S. trade policy effectiveness on its trading partner China, more attention should be paid to new unconventional trade policy options.

2. Literature Review

In history, trade protectionism has risen after the financial crises, countries have to stabilize their economies by imposing tariffs and quotas. With the recent financial crisis, only a few studies have found that trade protectionism has been globally rising for a short period. However, the country specific case could be different. Hoekman (2011) indicated that financial crisis indeed increased demand for protection in many countries, but the global supply chain has played an important role, and offset the impact of protective trade policies. The same evidence also can be found in Farhad (2011).

Empirical evidence shows there are three major macro factors that have an impact on the intensity of anti-dumping investigations:

- Country's Gross Domestic Product (GDP);
- Exchange rate;
- Trade balance.

Many economists consider country's GDP as an important indicator for measuring country's economic performance. Feinberg (2004) found that the GDP of importing countries is positively correlated with its number of anti-dumping investigations against its partners. However, with importing countries' economic booming, the GDP of importing countries starts to be negatively correlated with the number of investigations. Knetter and Prusa (2003) also pointed out that 1% drop in filing countries' economies will lead to 23% increase on average in the number of anti-dumping investigations, ceteris paribus. Furthermore, there is no clear relationship between the affected countries' GDP and the number of anti-dumping investigations. When filing country's GDP drops, the government will impose more taxes on its imports, thus keeping more local jobs. Interestingly, the affected country's real GDP growth can be either positive or negative. It does not affect home country to filing anti-dumping case against affected country. In other words, filing country is more interested in how to keep its own economy to grow rather than cooperate with its trade partners to achieve mutual economic benefits. The conclusions of these two papers are quite different. In Feinberg (2004), the author is more interested in investigating the relationship between anti-dumping investigations and the level of GDP. It means that a country with larger GDP tend to file more anti-dumping investigations against its trade partners. However, in Knetter and Prusa (2003), the authors detected that the growth rate of GDP in filing country has negative correlation with the number of anti-dumping investigations. It implies that the filing country's economy is booming, the filing cases will drop 23%. In other words, countries tend to file more anti-dumping cases during its GDP drops, which is exactly the case during the recent financial crisis.

Although the exchange rate is not a subject of essential discussion in this paper, it is also a factor that could have impact on the number of anti-dumping investigations. The earliest research on the relationship between exchange rate and the number of anti-dumping cases is

found by Feinberg (1989), he explored the relationship between fluctuation of the US dollar and the number of anti-dumping investigations against Brazil, South Korea, Japan and Mexico. He concluded that the number of anti-dumping investigations will increase with US dollar depreciation. However, Irwin (2004) makes the contradictive to Feinberg (1989) conclusion, he states that the number of anti-dumping investigations will increase with US dollar appreciation. Similar results can be found in Gbakou and Sandretto (2004). The results obtained from the studies using different data samples and methodologies are not so consistent, thus, there is no general agreement on the impact of anti-dumping on the trade relationship among countries. Each case should be analyzed differently. Nevertheless, there is an agreement in the literature that the above three macro factors would have impact on trade relationship between home country and its trade partners.

3. Trade overview and trade policy options during financial crisis

3.1 Trade activities overview for China and the U.S

The U.S. as the largest economy in the world has been sustained for a very long time. China's rapid trade expansion is one of the most important factors for the prominent economic growth of the U.S. Both countries are very active players in international trade market. Table 1 shows both countries' trade activities with the world major economies (G8 members).

Table 1. China and The U.S. Trade volume with world major economies in 2006

	China Trade Partner	2006 Volume (in million USD)	Percentage of Total Volume	The U.S. Trade Partner	2006 Volume (in million USD)	Percentage of Total Volume
1	U.S.A.	263115	14.95	Canada	537967	18.20
2	Japan	207295	11.78	China	361003	12.21
3	Germany	78194	4.44	Japan	211892	7.17
4	Russia	33387	1.90	Germany	132528	4.48
5	U.K.	30670	1.74	U.K.	100005	3.38
6	France	25268	1.44	France	62468	2.11
7	Italy	24578	1.40	Italy	46666	1.58
8	Canada	23179	1.32	Russia	25448	0.86
9	Total	1760396		Total	2956026	

Source: U.N. Comtrade database

By the end of 2006, China's total trade volume reached more than 1.7 trillion USD, and its

trade activities with the world major economies have contributed 38.95% of total trade volume. The U.S.'s trade activities are also very close to other major economies in the world. The total trade volume of G8 countries and China contributed 50% of their trade volume in 2006. In the other words, U.S. importing activities are more centralized with major economies compared to China. If a country has more centralized importing activities with its trade partners, its trade activities will be more sensitive to economic shocks or major trade partners' economic policy. From China's and the U.S. trade statistics, the U.S. due to its intensive and centralized import activities is more sensitive to its major partners' trade policy than China is. For the U.S. imports, the top 5 exporting partners are China (22%), Mexico (14%), Canada (9.9%), Japan (7.8%) and Germany (6%). It means the top 5 exporting partners to the U.S. contribute more than a half to the total U.S imports. For China, the top 5 exporting partners only contribute about 40% of its imports. As a result, if the home countries change their trade policy stance, the U.S. will have larger effect than China because the U.S. imports are more centered from its exporting partners. Therefore, the U.S. is very flexible in implementing trade policies to adjust its trade sector, especially during the financial crisis, the U.S. only needs to promulgate the country specific trade policies which are against those major importing partners (e.g., antidumping investigations against China), it will bring larger positive effects compare with other countries due to the centralized imports from those countries.

3.2 The Sino-US trade volumes and patterns and the trade policy options

The China's "Open Up" policy was introduced in 1982, and it aims at opening the Chinese economy to the world. During the last three decades, the economic reform in China has achieved great success as it became an economy with average growth rate of 6% per annum. In the past two decades, China has entered into the period of economic booming, and the

main factor, which is driving the China's economy, is its trade activities. In 1982, China was running a trade deficit of about 1.9 billion USD; a decade later China was running a trade surplus of about 8.74 billion USD. By the end of 2010, this number was about 182 billion USD. Those examples only prove that China's net export sector grows rapidly. However, other GDP components as consumption, investments and government expenditure, do not demonstrate any substantial change compared with the net exports. Thus one can conclude that China's prosperous economy is mainly due to China's strive trade activities. Therefore, China's economic structure is more sensitive to its trading partners' trade policy. During the financial crisis, rising trade protectionism will lead China's economic growth drop because of imposing trade barriers on Chinese exporters.

Figure 1 depicts the trend of Sino-U.S. total trade activities between 1999 and 2012, the trade volume (purple line) between these two countries grew at a slower rate before 2002. There is no clear upward or downward trend. From 2002 onwards, the total trade between these two countries shows a strong upward trend. There is only one exception during this period. In 2009, with outbreaks of financial crisis, the China's exports to the U.S. dropped by 13%, though it restarts to climb up afterwards. The trade volume sharply goes up from 150 to 500 billion USD. The graph shows a threefold increase in the number of trade volumes. Moreover, China is a net exporter to the U.S., and the U.S. exports to China (red line) has kept a very low growth rate between 1997 and 2012, till the end of 2012, the U.S. exports to China has reached only around 100 billion USD. It is different from the China's export which has reached 500 billion USD by 2012. In other words, in the bilateral trade relationship, China is in a position of 83% products and services are selling to U.S., whereas only 17% of products and services from its total trade volume are being bought from U.S. Figure 1 shows not only the position of these countries in their trade activities, but also indicates that China's exports to the U.S. have substantial drop during the period of financial crisis.

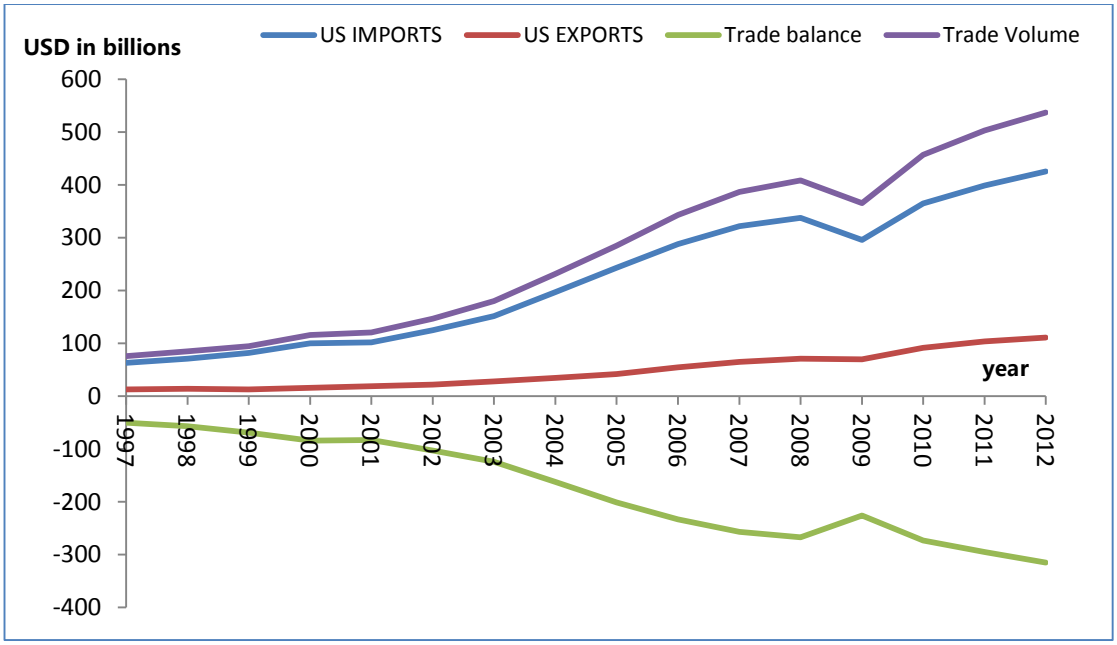

Figure 1. Sino-U.S. trade volumes and pattern 1999-2012(in billion USD)

Source: United States International Trade Commission Dataweb

With the outbreaks of global financial crisis, most of countries have suffered from shocks on different economic aspects and levels, leading them to enter into economic recession. Many researches have indicated that the global financial crisis had significant negative impact on country's economy. However, little research has a detailed look at analyzing economy breakdown structure. One of them are bilateral or multi-lateral trade activities. China and the U.S., as the largest economies in the world, are inescapable to face the challenges on international trade activities during the period of the Great Recession.

Table 2. The U.S. imports from its main trade partners (USD in billions)

	The U.S. Imports Volume (US imports at current prices in billions of USD)					The U.S. Imports Annual growth rate (%)			
	2006	2007	2008	2009	2010	2007	2008	2009	2010
China	288	322	338	296	365	11.81	4.97	-12.43	23.31
Canada	303	313	336	225	278	3.30	7.35	-33.04	23.56
Japan	148	145	139	96	121	-2.03	-4.14	-30.94	26.04
Germany	89	94	98	71	82	5.62	4.26	-27.55	15.49
U.K.	53	57	59	47	50	7.55	3.51	-20.34	6.38
France	37	42	44	34	38	13.51	4.76	-22.73	11.76
Russia	20	19	27	18	26	-5.00	42.11	-33.33	44.44

Source: U.S. International Trade Commission

Table 2 shows the U.S imports from its major trading partners. China has become the largest

exporter to U.S. since 2007. Before 2008, all countries have different positive growth rate on its exports to U.S, in exception of Japan. With a hit by global financial crisis, all countries have shown a dramatic decrease. One year later, the exports to U.S. start climbing up again. During 2009, Canada as the second largest exporter to U.S., has suffered a huge decline, approximately 33% drop. Comparing with China, the largest exporter to U.S. has suffered a loss, which is equivalent to 13% of its US exports. In the past, when the financial crisis hit country's economy, the majority of the governments chose to raise trade protectionism to support domestic industries. For example, during the Great Depression, the U.S. government promulgated a new tariff act (known as the Smoot–Hawley Tariff Act), which led to average 7-%-increase in the tariff rates for 20,000 import goods. However, in this generation, tariff was not a favorable choice for the government to raise trade protection. Therefore, the major economies have suffered from a substantial decrease in the exports to the U.S. However, China was a special case, during this period; it has introduced several policies (mainly in government spending and industry reform) as the response to trade protectionism of the U.S.

Before the 1980s, there are only a few countries adopted anti-dumping and other trade protection actions. The dominant trade policy tools are tariffs and nontariff barriers (NTB) during this period. Hufbauer (2009) indicated that 25% of the U.S. trade growth are mainly due to its trade policy liberalization since 1980. There are two forms of trade policy liberalization: the tariff liberalization (accounting for 45% of the trade growth) and the non-tariff barriers liberalization (accounting for 44%). Over the past 30 years, the average import tariff has fallen from 30% to 10%, which is an essential element of the emerging economies' success. Moreover, developing economies which sharply lowered tariffs in 1980, grew faster than the countries, which did not implement such a policy measures. Although tariffs and NTB are gradually decreased in trend, anti-dumping policy is gradually taking in place as country's favorable protective policy. Blonigen (2003) indicated that there are only a few

countries initiated 24-36 anti-dumping investigations per year, and the filing rate is only about 5%. After the Tokyo Round of the General Agreement on Tariffs and Trade (GATT) (1975-1979)[1], all GATT members have reached agreement on a broader definition of anti-dumping. Dumping is, in general, a situation of international price discrimination, where the price of a product when sold in the importing country is less than the price of that product in the market of the exporting country[2]. Anti-dumping is a measure to rectify the situation arising out of the dumping of goods and its trade distortive effect.[3] The users of anti-dumping have gradually increased in recent years especially, and Prusa (1999) states that more than a half of countries are new users of this trade policy.

By the end of 2008, anti-dumping is still widely used trade defense instrument worldwide, over 90% of trade protection actions are in the form of anti-dumping investigations (Davis 2009). Although more and more countries are favorable in using this policy instrument, the heavy users are still the U.S. and the EU members, and the targets are Asian emerging economies, such as China (Aggarwal 2008). This shows that many countries have started to implement anti-dumping investigations as one of the most frequent and powerful trade instruments during the 2008 financial crisis. In another sense, anti-dumping investigations against the country's exporters are becoming the major trade policy option for maintaining fair competition on the domestic market and stabilizing the country's economy. To sum up, the most important determinant of anti-dumping policy is becoming the major one is mainly due to the reduced tariff rates in the past decades, countries have to search another way to protect domestic industries and local enterprise interests when it is necessary.

[1] GATT was not an international organization; it was rather a sequence of agreements, which was further substituted by the creation of such international organization focused on trade as WTO.

[2] The official definition, which is given by WTO.

[3] http://commerce.nic.in/traderemedies/ad_measures_3.asp

4. The U.S. trade policies against China during financial crisis

4.1 Trade volumes and patterns between China and the U.S.

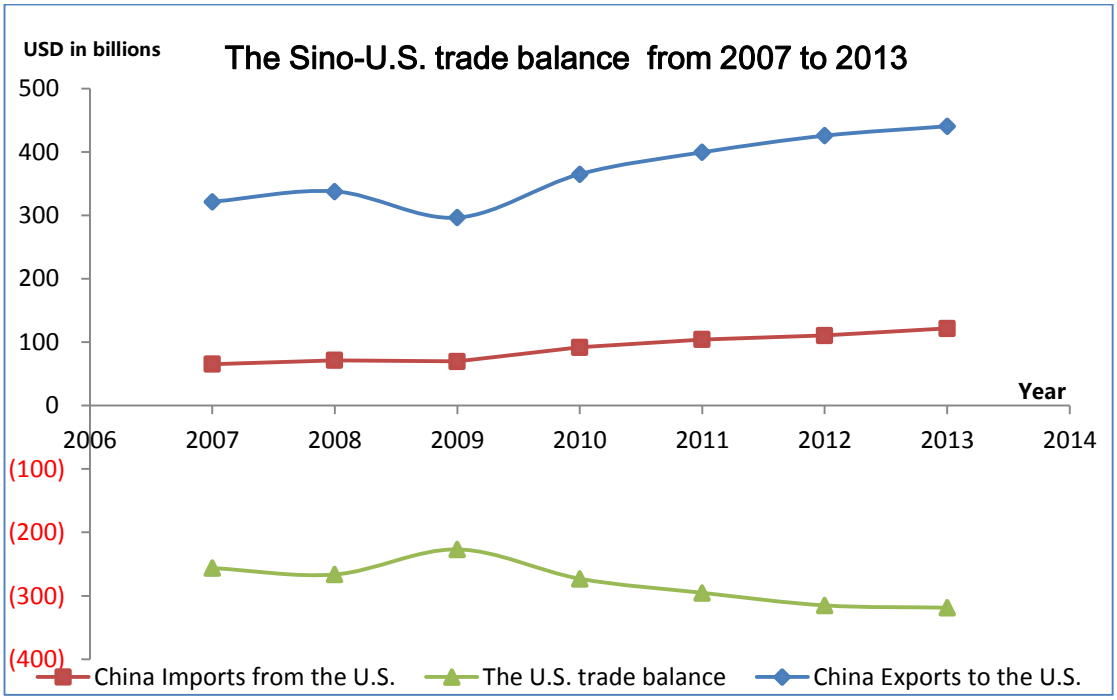

Figure 2. The Sino-U.S. trade volumes and pattern from 2007 to 2013 (USD in billions)
Source: United States International Trade Commission Dataweb

Figure 2 depicts the trade balances and the pattern of the Sino-U.S. total trade activities with two countries' imports and exports in 2007-2013. China's exports still contribute a large share in its total trade activities with the U.S. Even during the year of financial crisis outbreaks, China's exports encountered 13% drop, but recovered quickly in the following year. On the one side, China's imports had no great difference from the U.S. before the financial crisis. However, the imports steady grew afterwards. On the other side, the green line illustrates the trend of the trade balance of the U.S.; it was gradually worsening with the exception of the year 2009. By looking at economic structure, its consumption part has taken a large share of its overall economy, in year 2008, the financial crisis had huge negative impact on the U.S. consumption, which is the reason why China exports to the U.S. have been reduced. Meanwhile, the imports from the U.S. to China were not affected as much as China exports. Therefore, the trade balance was improved during that particular year. The

trade balance was worsening again afterwards, but the growth rate of trade deficit slowed down. To conclude, China still maintains its net exporter position to the U.S, and the trade balance is still increasing but the growth rate has been mitigated.

To analyze the changes of trade outcomes during the period of the Great Recession, we should focus on which trade policies have been implemented by the U.S. to protect the domestic industries and local enterprise's interests. Unlike the Great Depression, the traditional trade instruments such as tariffs and quotas were not frequently used during this time, the U.S. government has implemented a protective trade policy using the anti-dumping and other unconventional polices.

4.2 The U.S. trade policy response in the Sino-U.S. trade relationship

According to USITC trade statistics from 2000-2010, the U.S. has initiated 369 anti-dumping investigations against its trade partners, and 92 of them (which is about 25% of the total U.S. anti-dumping investigations) were against China. Among these 369 anti-dumping investigations, 287 cases have the results in favor of the U.S. side, and China accounts only for 23.5% of them. In year 2007, there were only 13 anti-dumping investigations initiated against China. However, this number has increased to 27 after the financial crisis outbreaks, which is two times more than in the year 2007. It is clear that anti-dumping investigations are used more intensively during the financial crises. This is also the policy response for the U.S. government, but the Chinese exports do not declined too much, in other words, the anti-dumping policy is less effective for the U.S. to protect its domestic industries and local enterprises' interests.

The anti-dumping investigation is becoming less effective, because the international trade has changed dramatically during the last two decades. Bilateral trade between includes exchanging not only final, but also intermediate goods. A country may sell its components to

the trading partner, and the final goods will be assembled in a foreign country. After the financial crisis outbreaks, according to the UN Comtrade statistics, the U.S. total trade balance to the world has actually improved by almost 37%. In 2008, the trade deficit of the U.S. is about 865 billion USD, one year later it decreased to 545 billion. The international investment has made geographic boundaries less clear. When the home country considers promulgating a new trade policy, it has to consider not just the domestic producers' interests, but also the investments abroad. In other words, when the home country holds international investment portfolios, the home country and its trading partners, who receive the foreign direct investment from the home country, will have the same economic interests. For instance, the unilateral trade protective policy, such as anti-dumping policy probably could improve local producer's interest, but, in global context, such policy will be less effective by improving country's trade growth.

Since the anti-dumping investigations have become a popular trade instrument to improve the trade deficits, countries tend to raise protectionism by implementing this trade instrument. Meanwhile, the above evidences support that there is a relationship between anti-dumping investigations and country's economic performance. However, in the context of globalization with new supply chain model, there is no evidence to support the existing relationship between anti-dumping investigations and country's trade balance and economic performance.

5. Protectionism is more hidden during the Great Recession

In section 4.1, it was shown that that the U.S. trade balance has been improved and it is getting worse with time passing, but the rate of worsening speed is slowing down. It is because besides the anti-dumping policy the U.S. government has implemented other unconventional policies to raise protectionism indirectly, and those instruments are not traditional.

5.1 The U.S. trade protectionism against China during the crisis

Trade frictions between China and the U.S. has been escalated due to the outbreak of the financial crisis, the U.S. as the biggest victim has to take many actions to respond to the economic shock of the financial crisis, from the trade policy point of view, policy will be more favorable of the U.S. industries and enterprises. In this way, Chinese exporters to the U.S. will be harmed by such policy adjustments. During the Great Depression, the increasing trade protectionism is in the form of raising tariff rate, such as Smoot-Hawley Tariff Clause. In recent crisis, the increasing trade protectionism is in form of initiating more anti-dumping investigations and other unconventional trade policies, and those policies are more hidden.

According to the Global Trade Alerts classification of protectionist trade measures, there are three major type evaluations (see Appendix 1 for more detailed explanation) of trade measure, which represent different level impacts on trade outcome.

Table 4.Trade measure of the U.S. against China reported by GTA from 2009 to 2013

Trade Measures Evaluation	2009	2010	2011	2012	2013
Red Alert	14	4	1	5	7
Amber Alert	15	8	15	8	14
Green Alert	0	1	4	0	2
Total	29	13	20	13	23

Source: Global Trade Alerts Trade measure and statistics

*Notes: **Red Alert** means an implemented policy almost certainly discriminates against foreign commercial interests. **Amber Alert** means an implemented policy will foreign commercial interests, or a policy will almost certainly hurt foreign commercial interests if implemented. **Green Alert** means an implemented liberalized trade policy or no harm on foreign commercial interests.*

The above table shows the recent trend of the U.S. trade measures against China. In the following year after the outbreak of the financial crisis in the second half of 2008, the U.S. has raised 29 trade measures against China, and among which a half were “red” and a half were ”amber” trade measures. By comparing with 2010, the total as well as the “red” trade measures significantly reduced. The trade policies of the U.S. are quite different against China from year to year. The “amber” alerts are following the same pattern as the total trade measures. They can be understood as a trade policy buffer, which is between “red” and

"green" alerts.

Although we cannot observe the viable trend of total annual trade measures and the "amber" trade alerts of the U.S., the "red" alert has been dramatically reduced. In 2009, after the outbreak of the financial crisis, massive redundancies and rescue packages for bailing out of the U.S. enterprises force the U.S. government to shape its trade policy towards more protectionism in order to generate more jobs for locals and support the U.S. industries. However, such trade policies cannot last for a long time, with the world economy recovery, the U.S. government has changed its trade policies gradually, in the next 4 years after 2009, and the ""red" alerts were only 17 in total. Such evidence also supports the idea that the U.S. is gradually reducing its trade protectionism level. This is quite in line with the outcome of the previous sections: the "red" alerts are certainly going to hurt foreign commercial interests, its massive numbers is going to push down China's exports to the U.S., thus to improve the U.S. trade balance. With the gradually reducing number of the "red" alerts, the U.S. trade balance starts to drop again.

5.2 The U.S. trade policy instruments against China during financial crisis

So far, we discussed that the "red" alerts trade measures are certainly going to hurt China commercial interests, thus to improve the U.S. trade balance. However, it is unclear what the actual trade measures are. The following is frequency of trade policy instruments, which are used by the U.S. against Chinese exports from 2009 to 2013.

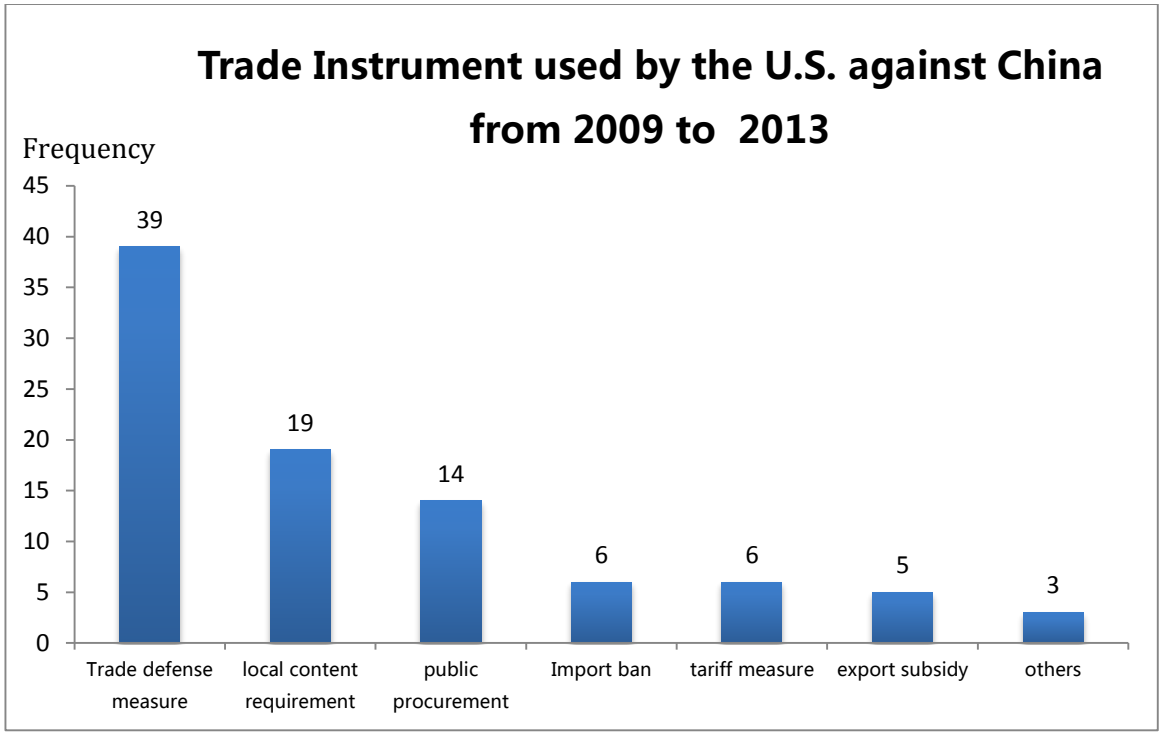

Figure 3.Trade policy instrument of the U.S. used against China from 2009 to 2013

Source: Global Trade Alerts Trade measure and statistics

Notes: The frequency of each trade policy instrument is equivalent to each trade policy implemented by the U.S. against China from 2009 to 2013，the number on each bar depicts total times of each trade instrument used from 2009 to 2013.

The top three trade measures are anti-dumping investigations, local content requirement, and public procurement. With the promulgation of the American Recovery and Reinvestment Act of 2009, the local content requirements and public procurement have been implemented 34 times in total against China. The trade defense measure (anti-dumping, countervailing duty, safeguards) as the most popular trade policy instruments, they take about one third of its total measures.

5.3 Conventional trade policy: Anti-dumping investigation

Anti-dumping investigation is the most important instrument in trade defense measures, it can help home country raise the protection for home productions. Once home country observed that imports are sold at a lower price than the same products in the produced country, home country could file anti-dumping investigation against exporting country's goods. Such policy instrument could prevent home country's industry to be hurt. According to figure 4, the trend of implementing trade defense measures to raise protection has sharply decreased from 2009

to 2010, though it rises up in the next 3 years, and it demonstrates the U.S. government different trade policy stances to respond the financial crisis in different stages. The reason to explain why the U.S. has changed its stance to less protectionism after 2010 is the trade defense measure could help the U.S. enterprises to survive during the financial crisis and avoid massive unemployment in the labor market. The cost of implementing such policy is to sacrifice the benefits of household sectors. Over a period, household sector will gradually lose the purchasing power as price level rises. Therefore, the policy is not sustainable to help the U.S. either stabilize its economy or improve the trade deficit.

Other conventional trade policy instruments such as tariffs are not widely used in the case of the Sino-U.S. trade activities during the period of the financial crisis. This is mainly due to the reason that globalization has integrated China and the U.S. into global supply chain, both countries keep their borders open to reduce the costs of trade and stabilize the price of imports to help not just themselves but also other countries smooth the trade activities. In the period of financial crisis, the cooperation among countries will be more important for each country to make world economy recover.

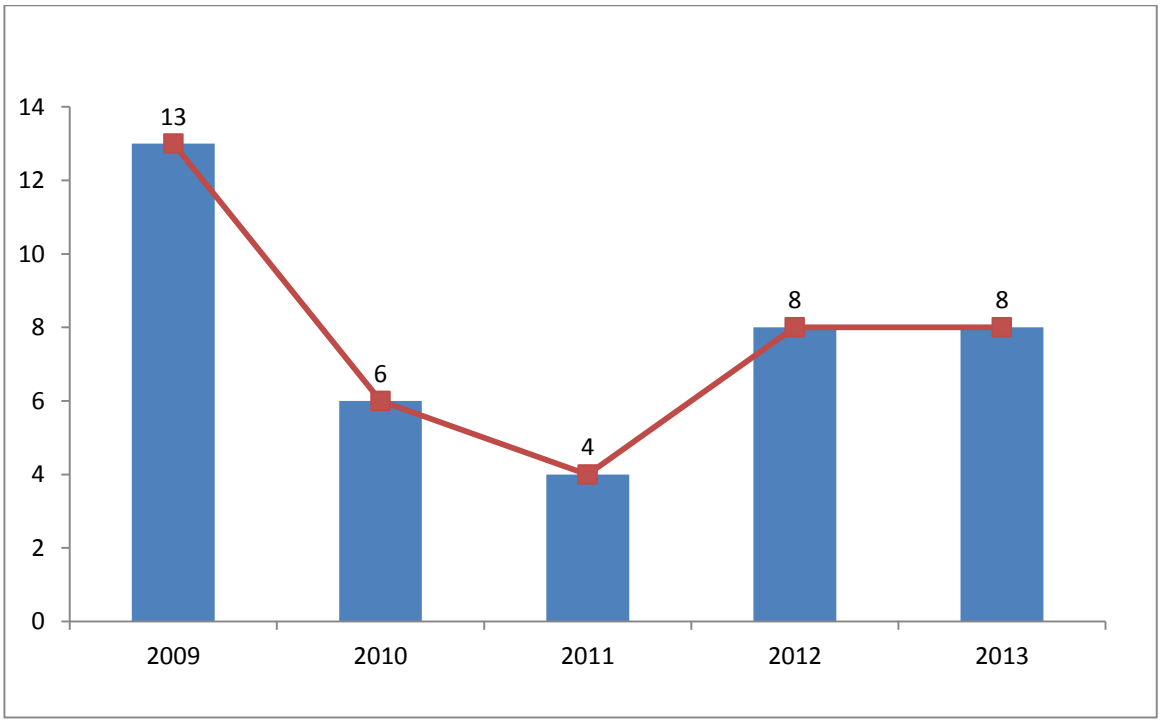

Figure 4. Frequency of trade defense measure implemented of the U.S. against China

from 2009 to 2013

Source: Global Trade Alerts Trade measure and statistics

Notes: trade defense measure includes anti-dumping investigations, CVDs, and safeguards, the frequency is equivalent to the number of these 3 trade defense measure implemented on yearly basis

5.4 Unconventional trade policy: local content requirements and public procurement

The conventional trade instruments such as anti-dumping is frequently and widely used in the last few decades, in the background of globalization, the conventional trade policy is probably not a powerful tool for a country to implement it, there are some other unconventional policy tools which are not obvious to detect.

5.4.1 Local content requirement

Over the last decade, the traditional trade policy instruments are becoming a less dominant instrument when a country takes trade policy responses, such as tariffs and quotas. After the financial crisis, new trade policy instruments have been introduced to take response to the financial crisis. One of the most popular policy instruments is the local content requirement. It is a trade measure, which is used by home country to require that a final good must contain a proportion of materials provided domestically. The Trade Related Investment Measures (TRIMs) from WTO has recognized that local content requirements are strictly prohibited under the WTO trade protocol. For the Sino-U.S. trade activities, as shown in figure 4, there were 13 local content requirements trade measures against China over the last 5 years. To evaluate the effects of implementing such policy by the U.S. will be more complicated than the effect from simply imposing tariffs or quotas.

On the U.S. side, the local content requirement will help domestic enterprises enhance their profitability by restricting enterprises to purchase the required for the production processes materials globally. Especially in the stage of financial crisis, the enhancement of profitability of local supplier will lead home country's economy to be more stable. Such policy implementation could generate more job positions, due to the requirement of purchasing

locally by enterprises; the demand of required materials will be sharply higher. Local suppliers have to expand its own production by employing more labor thus to decrease the unemployment rate in the home country. However, the price difference of the final good due to the local content requirement will be shifted to the consumer, which will reduce the consumer surplus. It will also disincentive the multinational corporations to invest in the U.S. To maximize the profit of a multinational corporation, the best strategy to achieve the internalization in the U.S. However, the local content requirement states that the final goods must contain domestic materials, thus internalization by multinational corporations is impossible to achieve. It could help both local suppliers and multinational corporations to specialize in the production of goods, which they are focusing on to ensure themselves being more competitive in the market. Such policy also distorts the resource allocation in the home country. According to the David Ricardo theory, the U.S. should specialize in the production of goods in which they have a comparative advantage. However, if the local content requirements requires the products which the U.S. does not have comparative advantage, it will finally distort the resource allocation thus to hurt international trade activities, as a result, the world economic welfare will be reduced with it.

5.4.2 Public procurement

The public procurement is another unconventional trade policy, which has been widely implemented over the last decade. There are a few studies about the causal effects of public procurement on international trade activities. Kono and Rikard (2010) indicated that international trade welfare has been undermined by the “Buy American” provisions, and the authors also suggested that democratic government is more likely to obstruct international trade by using an opaque government procurement process. Chen and Whalley (2011) argued if a country holds membership of the government procurement agreement (GPA), the

government procurement process will be relatively fair and transparent compared with the country without the membership, as a result, a GPA membership would have a positive impact on both trade goods and services.

Taking the case of the Sino-U.S trade, Obama government introduced the “Buy American” provisions in 2009. This policy requires that the government should purchase more American products, with the government, which is totaling at 700 billion USD, this could stabilize the U.S. economy by increasing government spending. However, the procurement is very selective. In other words, the procurement is limited to a range, which ruled out all Chinese products.

In a short-run, it could help the U.S. to generate more jobs and stabilize the economy, but in a long-run, buying American products will stop trade flows, without external competitive pressure for local enterprise, thus innovation and competitiveness of local enterprises will be undermined. In the context of globalization, most of the production is done globally, the provision will cause the global supply chain to be reconnected, and the obstruction of global chain will increase trade costs and distort the resource allocation.

In the background of globalization, China and the U.S. economies are more integrated, thus the conventional trade policies are probably not the best choices during economic downturn. However, these two unconventional policies are more influential in the stage of globalization. To complete a final good, the production should be distributed among different countries, local content requirement and public procurement distort the economic welfare globally, thus improving home country’s trade balance and economic performance. Therefore, for China as one of the largest exporters to the U.S. at this point of time, these two unconventional policies promulgated by the U.S. authorities are going to have significant impact than the conventional trade policy. During the time of financial crisis, the U.S. authorities implemented major trade instruments (anti-dumping, local content requirement and public

procurement) to improve its trade balance, and with the analysis above, anti-dumping is not an effective trade instrument, by ruling out anti-dumping policy. We could conclude that these two unconventional policies local content requirement and public procurement are actually playing an important role in improving the U.S. trade balance.

6. Empirical Evidence

6.1 Macroeconomic factors and anti-dumping investigations

The preceding discussion elaborates how the Sino-The U.S. trade pattern is affected by the 2008 financial crisis. There are a few macro factors, which are the driven forces behind the financial crisis. From above sections, we conclude that the U.S. is more flexible to promulgate new country specific trade policy due to its imports centralization from few countries, and China is more sensitive to the protective trade policy due to the fact that its economic growth is more relying on the exports. The consumers' purchasing power is also a factor, which will have impacts on bilateral trade activities. Hence, the U.S. trade balances are related to both countries' income, the exchange rate and trade policies. For the case of China and the U.S., we will only explore the anti-dumping policy's relationship with the trade balance, because anti-dumping is not just a popular trade instrument in this age, but also a country specific trade instrument for the U.S. to choose.

National income. It is a measurement of a country's economic overall performance. A country's national income is an important indicator to measure its exports, if it increases, domestic consumption will increase. The products for increased domestic consumption is either from trading partners exports to the country or the country's domestic supply, both ways have impacts on the country's trade balance. For the country's trading partner, an increase in national income stands for its increasing purchasing power. Therefore, both

country's national income has impact on the country's trade balance.

Exchange rate. It is a relative price of the currency of one country expressed in the currency of the other country. It could have effects on both countries' exports and imports. Fluctuations in the exchange rate would increase the risk of uncertainty for business gains and losses. The appreciation of home country's currency will lead products of home country to be less competitive because their prices are actually higher in foreign country; in fact, there is no price increase in the home country itself. The depreciation of home country's currency will lead to the fact that the home country's products will be more competitive in the international market. However, it could increase the possibility of anti-dumping investigations from foreign countries against home country.

To explore the real effects of exchange rate on trade balance, inflation also has to be considered. When a country is experiencing inflation, the currency is devalued domestically despite the nominal exchange rate still remains the same in a foreign exchange rate market. Most of the time, the impact is not going to be effective immediately, but effective with the time passing. Increasing money supply will cause inflation, and then the inflation will push down the real interest rate. According to interest rate parity, at the point in time, the exchange rate still remains the same, but the expected future exchange rate will be devalued. Therefore, the existing inflation will only have impact on future exchange rate, but not the spot exchange rate, so the inflation effects will have impact on future exchange rate according the interest rate parity. When a country is experiencing inflation: the commodity and labor price level go up domestically, and drive the price level of commodity and labor to increase in the international market after. Therefore, the competitiveness of the country will be undermined under this circumstance; finally, it will be transmitted to country's exports and foreign reserves.

Anti-dumping duties. By WTO definition, dumping is, in general, is a situation of

international price discrimination, where the price of a product when sold in the importing country is less than the price of that product in the market of the exporting country. The corrective action of its trading partners of dumping is called "anti-dumping", which usually practices in imposing anti-dumping duties or other tariffs. Such actions definitely have impacts on trade activities between home country and its trading partners. Moreover, anti-dumping will cause that a country's resource are allocated inefficiently. According to first and second theorems of the welfare economics, free trade will lead to a more efficient allocation of resources in the country. In recent years, the economic performances of many developing countries also support such theory. Anti-dumping also has impact on exporter's industrial structure. Anti-dumping investigations are usually against one type or a certain range of products in the same industry, thus anti-dumping investigations have a severe hit on the industry of the exporting country.

6.2 Data Source

Based on the limitation of data availability, the data sample includes China and the U.S. national income, trade balance between these 2 countries, and antidumping investigations and verdicts from the U.S. against China from 2006 to 2012. All data frequencies are in monthly.

National income. National income is also considered as country's GDP. Due to all GDP statistics from official channels are released quarterly and annually, this paper will choose proxies for national income, the U.S. industrial product index dataset is obtained from the Federal Reserve Bank of St. Louis (FRED@Economic Data). However, another index Purchasing Manager Index (PMI) could reflect industrial production, and the dataset is obtained from Bureau of China Statistics.

Exchange Rate. Real Effective Exchange Rate is a weighted average of a country's currency relative to other currencies with inflation excluded. The data are obtained from the Bank for

International Settlement (BIS) Database.

Anti-Dumping Index. Anti-dumping index is based on the calculation of each monthly anti-dumping investigations and verdicts. The calculation assumes each investigation and verdict has influence power with different magnitude. The detailed calculation will be exhibited in the following section. The data and events are obtained from United States International Trade Commission (USITC) press releases.

6.3 Regression analysis

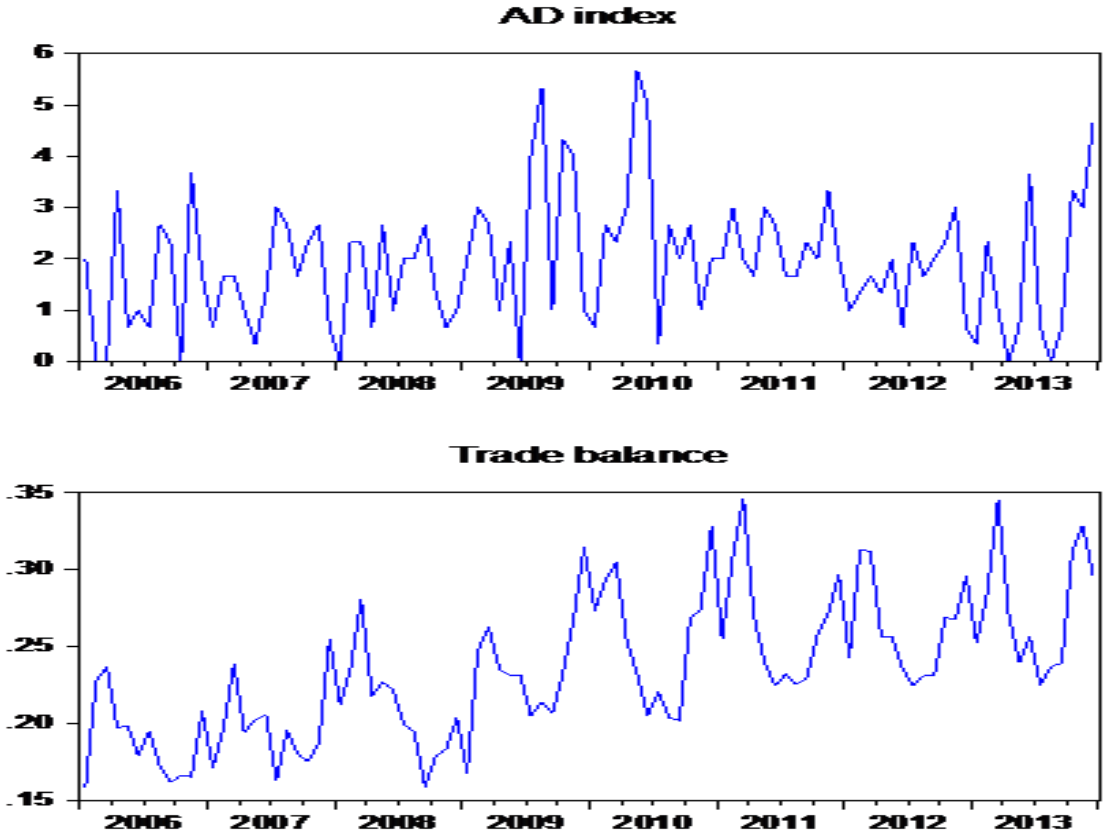

Figure 5.Anti-dumping index and Sino-The U.S. trade balances
Source: USITC Database
Notes: AD index is composite index which measures anti-dumping investigations influence power with different magnitude

Figure 5 displays anti-dumping index and trade balances of these 2 countries between 2006 and 2013. The figure shows that there are reasonable variations in anti-dumping investigations during the observed period. The U.S. trade balance follows similar process.

In Rose and Yellen (1989) trade balance model, it is possible to detect the relationship

between exchange rate, importing and exporting country's GDP, and trade balance. However, the historical statistics also shows that antidumping investigations are correlated with country's GDP, especially during the period of financial crisis, the trade policies are tend to be very protective to home country from international trade perspective, which will lead home country's imports to be reduced under protective trade policy. Therefore, to assess pre-existing policies whether could have impacts on Sino-US trade balance, the model can be revised as:

$$TB_{US,t} = \alpha_0 + \alpha_1 PPI_{China,t} + \alpha_2 REER_{rmb,t} + \alpha_4 IPI_{US,t} + \alpha_5 AI_t + \varepsilon_t , \quad (1)$$

where $TB_{US,t}$ is defined as the ratio of U.S. exports to China over its imports from China at time t; $PPI_{China,t}$ (Production Price Index) is a proxy measure of China real GDP; $IPI_{US,t}$ is the measure of US real GDP; $REER_{rmb,t}$ is the bilateral real effective exchange rate between China and its trading partner US; AI_t (anti-dumping Index) is an index to measure the US trade policies in way that an increase reflects a more restrictive trade policy against Chinese exports; $\varepsilon_t \sim N(0, \sigma^2)$.

Currently, there is no standard anti-dumping index can be used for anti-dumping analysis, for the case between the U.S. and China, the number of investigations can be obtained from United States International Trade Commission press room (USITC), each event can be an input for anti-dumping measurement in different levels. Therefore, the index can be defined as composite effect of monthly anti-dumping cases, potential anti-dumping cases, and protectionist verdict. Although the data on anti-dumping case on each item can be slightly overlapped due to the reason that total anti-dumping cases can include potential cases and protectionist verdict, these 3 factors still can be evaluated independently. The reason is that each factor represents its trade partner stance on existing and future trading policy in different periods:

Due to the reason that each factor has different effects on different levels, it can be detailed in table 5.

Table.5 Anti-dumping Case Interpretation

Anti-dumping factor	Interpretation	Level	Direction
Total cases	Total cases indicate that country's trading partner's stance on its existing trading policy.	Medium	+
Potential cases	Potential cases indicate that country's trading partner's stance on its future trading policy.	Low	+
Protectionist verdicts	Protectionist verdicts indicate that country's trading partner has been taken the very defensive action on the country's exports.	High	+

As mentioned above, there is no standard way to quantify the anti-dumping index. However, each factor represents the different levels of effects on its outcome, which is trade policy stance. Based on different levels, each factor also can be weighted to measure the anti-dumping index. By using 1,2,3 stands for effect level low, medium and high, the index can be calculated by:

$$A_i = \frac{(1 * Potential\ cases + 2 * Total\ cases + 3 * \text{Protectionist}\ \ verdicts)}{3} \quad (2)$$

Table 6 presents the estimation of equation (1).

Table 6. OLS regression results of model (1)

Dependent Variable: TB
Method: Least Squares
Sample (adjusted): 2006M01 2013M12
Included observations: 96
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Revised Model		
	Coefficient	S.E	p value
Anti-dumping index	-0.001870	0.002771	0.5099
China PMI	0.006724*	0.000960	0.0000
The U.S. IPI	-0.000838	0.001008	0.2428
$REER_{rmb}$	0.003988*	0.000510	0.0000
R^2	0.4967		

F-Stat	22.45
DW	1.28

Note:*significant at 5% level

The basic regression produces a positive and significant relationship between REER and the U.S. trade balances. It means that RMB appreciation will have positive impact on improving trade deficits. Meanwhile, the China's PMI also has positive impact on the U.S. trade balances. The basic regression implies only an RMB exchange rate and China's PMI are positive correlated with the U.S. trade balance. Moreover, the key variable, anti-dumping index, is not statistically significant. Although all control variables are jointly significant at 5% significance level, anti-dumping has no impact on the U.S trade balances. Nevertheless, the result estimated based on time series analysis, to insure basic regression is unbiased estimates, few tests are necessary for further analysis. To test stationarity of dataset, Augmented Dickey Fuller (ADF) test is necessary for testing stationary of each data. The results are presented in table 7.

Table 7. Augmented Dickey Fuller (ADF) test's results

Variables	Testing Method(c,t,k)	ADF stat	P value@ 5%	Result
Trade Balance		-3.969412	-2.9750	Stationary
REER	(c,n,1)	-0.282815	-2.9750	Non-stationary
China PMI	(c,n,1)	-3.804690	-2.9750	Stationary
The U.S. IPI	(c,n,1)	-0.667742	-2.9750	Non-stationary
Anti-dumping Index	(c,n,1)	-8.274521	-2.9750	Stationary
ΔTrade Balance	(c,t,1)	-12.39255	-3.4583	Stationary
ΔREER	(c,t,1)	-7.084250	-3.4583	Stationary
ΔChina PMI	(c,t,1)	-8.837170	-3.4583	Stationary
ΔThe U.S. IPI	(c,t,1)	-4.243175	-3.4583	Stationary
ΔAnti-dumping Index	(c,t,1)	-13.01585	-3.4583	Stationary

Note: In testing method (c.t.k), c represents constant, t represents trend(n means not included, t means included), k represents # of lags.

Due to REER and The U.S. IPI are not stationary at level, the results from basic regression will be biased. However, it can be seen from the test results above that the variables are all stationary at the first difference at 5% significance. In order to obtain unbiased estimates, the

basic regression can be revised as following regression:

$$\Delta TB_{US,t} = \beta_0 + \beta_1 \Delta PMI_{China,t} + \beta_2 \Delta REER_{rmb,t} + \beta_3 \Delta IPI_{US,t} + \beta_4 \Delta AI_t + \xi_t , \quad (3)$$

The results are presented in table 8.

Table 8. OLS regression results of revised model (3)

Dependent Variable: TB
Method: Least Squares
Sample (adjusted): 2006M02 2013M11
Included observations: 95 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Revised Model		
	Coefficient	S.E	p value
ΔAnti-dumping index	-0.000649	0.001939	0.7389
ΔChina PMI	0.001602	0.002221	0.2820
ΔThe U.S. IPI	0.004925	0.001480	0.1327
$\Delta REER_{rmb}$	-0.000400	0.003246	0.8573
R^2	0.02		
F-Stat	0.78		
DW	2.46		

Note:*significant at 5% level

The results are quite different comparing with the baseline model. China's REER is not significant anymore, which means that the real effective exchange rate of RMB will not help the U.S. to improve its trade deficit. Meanwhile, in a revised model, both China's PMI (which can be considered as China's GDP) and the U.S. IPI (which can be considered as the U.S. GDP) are not statistically significant. Moreover, anti-dumping index has no significant impact on the U.S. trade balance, one could argue that anti-dumping investigation is a long process, the first difference on 1 month will not reflect the full impact on trade balances due to the existence of seasonality. Therefore, the new regression model will be developed based on first difference on 1-year basis. The results are presented in the table 9.

Table 9. OLS regression results of revised model on 1 year

Dependent Variable: TB
Method: Least Squares
Sample (adjusted): 2007M01 2013M12
Included observations: 84 after adjustments
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Revised Model		
	Coefficient	S.E	p value

ΔAnti-dumping index	-0.005052	0.003450	0.0834
ΔChina PMI	0.004350*	0.000930	0.0000
ΔThe U.S. IPI	0.003939	0.001122	0.7968
$\Delta REER_{rmb}$	0.004806*	0.000549	0.0000
R^2	0.51		
F-Stat	21.97		
DW	1.701309		

Note:*significant at 5% level

In 1-year difference regression, only China PMI and REER are statistically significant. The exchange rate still has impact on the trade balance. The key variable - anti-dumping index - still has no significant impact on the U.S. trade balance. Therefore, we can conclude that only China and the exchange rate fluctuations have significant impact on trade balance, the U.S. economic performance and anti-dumping investigations will not help the U.S. solve the trade deficit.

To sum up, during the period of the financial crisis, the U.S. imports have suffered a sharp drop with its major trading partners. To analyze effects of financial crisis on trade, we try to detect what are the driven forces behind financial crisis, and the results show that only exporting country's (China in this case) GDP and RMB exchange rate will have effects on trade outcome. The importing country's (the U.S. in this case) GDP and anti-dumping investigations are not going to change the U.S. trade balance effectively. The global production process and international investment portfolios have made the U.S. economic interests not only in its territory, but also in China. The increasing number of anti-dumping investigations on China's exports by the U.S. side is not going to have significant impact on the U.S. trade balances due to the global production and international investment portfolios. Therefore, for the Sino-U.S. case, it seems that an anti-dumping policy implementation is a good way to reduce the China exports. However, the global production process and international investment portfolios made anti-dumping policy be wrong trade policy option for the U.S. government.

7. Conclusion

The outbreak of financial crisis in 2008 has shifted international trade activities to a paradigm of protectionism. In the last few decades, anti-dumping has been a dominant strategy for home country as the policy response. With a long history of trade deficit in the U.S. with China, the U.S. has tried to improve its deficit by implementing anti-dumping investigations and other unconventional trade policy instruments against China. By analyzing the historical data, the results suggest that anti-dumping investigations have no significant impact on improving trade balance, only China's GDP and RMB exchange rate matter. To support the facts that the U.S. trade balance is improved during the financial crisis, I found out that there are some other invisible trade instruments such as local content requirement and public procurement. I found the reason why the trade activities are gradually changing in the background of globalization - the production process could be distributed among different countries, anti-dumping is not going to have significant impact because part of production could be also located in the U.S. However, local content requirement and public procurement distort the economic welfare globally, thus to improve the U.S. trade balance.

8. Policy Recommendations

8.1 WTO and each political authority should reconsider the current anti-dumping mechanism to keep fair competition in international trade activities

The empirical evidence suggests that anti-dumping investigations actually have no significant impact on improving trade growth. However, the anti-dumping measure is the frequently used trade policy tool over the last decade. To maintain the fair competition among the countries, the anti-dumping mechanism should be redesigned which is aimed at the business entity level, not the country/industry level. As I analyzed in this paper, the globalization has distributed country's commercial interest not just within the country but also in other foreign

countries, when the country announce a new anti-dumping policy, due to the targeted country holds the initiated country's investment portfolio, the anti-dumping policy is actually against both countries. Moreover, the current anti-dumping policy is more industry-focused, the country's enterprises in the targeted country will be affected if the country announces an industry-focused anti-dumping policy. Therefore, the WTO should reconsider the current anti-dumping mechanism to make it more enterprise-focused.

8.2 Seek deeper economic cooperation with the trading partners

Both countries should reinforce the economic cooperation. To overcome the Great Recession, each country with its trading partners should cooperate rather than raising trade protectionism. The above analysis has shown global fragmentation has played an important role in improving trade growth, more and more products' production process are completed across the countries, through increasing foreign investment to each other to muddy the local and foreign economic interests, the unilateral protective trade policy (such as anti-dumping) will be less efficient. To achieve the mutual benefits for the country and its trading partners, they should be more open and friendly in terms of trade policy. Therefore, each country could absorb more foreign direct investment from its trading partners, to make the country and its trading partners are more economic-linked on the global supply chain as the production process are not completed locally.

8.3 New Agenda on "Behind Border Trade Policy Agreements"

As anti-dumping is frequently used but not an efficient trade policy instrument, there are some "emerging" trade policy instruments start to be popular trade policy instrument. And those policy instruments are much hidden, currently, there are no regulations or rules on how and when those trade instruments should be implemented, due to those instruments are

gradually taking over the dominant position in raising trade protectionism. Such unilateral and protective trade policy will be more harmful to the international trade activities in the background of globalization. Therefore, all countries should suggest the WTO start a new agenda on “Behind Border Trade Policy Agreements” to restrain each trade member’s unfair and opaque trade policy to be implemented for trade protectionism, otherwise, the global trade order will be a chaos.

Appendix 1

Type	Description
Red	The measure has been implemented and almost certainly discriminates against foreign commercial interests.
Amber	(i) The measure has been implemented and may involve discrimination against foreign commercial interests; OR (ii) The measure has been announced or is under consideration and would (if implemented) almost certainly involve discrimination against foreign commercial interests.
Green	(i) The measure has been announced and involves liberalization on a non-discriminatory (i.e., most favored nation) basis; OR (ii) The measure has been implemented and is found (upon investigation) not to be discriminatory: OR (iii) The measure has been implemented, involves no further discrimination, and improves the transparency of a jurisdiction’s trade-related policies.

Note: The description of each trade measure is officially defined by Global Trade Alerts.

References

Bernard. H. (2012) "Trade Policy, So far so good?" Finance and Development, pp.17-19, June 2012.

Blanchard, E. J. (2010) "Reevaluating the Role of Trade Agreements: Does Investment Globalization Make the WTO Obsolete?" Journal of International Economics 82 (1). Elsevier: 63–72.

Blanchard, E. J. (2015). "A Shifting Mandate: International Ownership, Global Fragmentation, and a Case for Deeper Integration under the WTO." World Trade Review 14 (01). Cambridge University Press: 87–99.

Chad P. B. and Rachel M. (2005) "The U.S. trade policy toward China: discrimination and its implications". Brandeis University manuscript.

Cathleen C., Gary C. H., and Jeffrey J. S. (2014) "A Proposed Code to Discipline Local Content Requirements". Peterson Institute for International Economics Policy Brief No.PB14-6.

Centre for Economic Policy Research (CEPR). "Beggar-Thy-Poor-Neighbor: Crisis-Era Protectionism and Developing Countries". The 15th Global Trade Alert Report.2014.

Dick K. N. (2009) "The Global Financial Crisis: Foreign and Trade Policy Effects". CRS Report for Congress.7-5700-R40496.

Faqin L., Hsiao C. T., and Lin W.(2014) "The Nexus between AntiDumping Petitions and Exports during the Global Financial Crisis: Evidence on the People's Republic of China". ADB Working paper Series on Regional Economic Integration. No.131.

Kishore G., Bernard H. and Yue C. (2011) "Determinants of Trade Policy Responses to the 2008 Financial Crisis". Policy Research Working Paper 5862.

Lucy D. (2009) "Ten years of anti-dumping in the EU: economic and political targeting". ECIPE Working Paper, no. 02.

Mark W. (2012) "Anti-dumping in emerging Asia giants". Harvard International Law Journal Vol.53(1).

Mohammad F. (2011) "The global economic crisis, contemporary protectionism, and least developed countries". Studies in Trade and Investment. United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), No.2625.

Michael F. and Ludger S. (1999)"Special Study 3: Trade, Finance and Financial Crisis". World Trade Organization.

Rose, A K. & Yellen, J. L. (1989)"Is there a J-curve?" Journal of Monetary Economics, Elsevier, vol. 24(1), pp. 53-68, July.

Thomas J. P. (1999) "On the spread and impact of Anti-dumping". NBER Working Paper 7404.

Thomas K. and Karen S.(1998) "Free versus Fair Trade: The Dumping Issue". Current Issue in economics and finance. Vol.4(8).